some intense and often-repeated mental emotions, the lacteal secretion diminished considerably; the right breast retained a little milk, but the left was almost completely dried up. M. Becquerel applied the electrical current at first to the left breast, placing the moist excitors, made of sponge, successively in the different points of the circumference of the breast, so that the currents might traverse the organ in all directions. Three applications were made, each lasting a quarter of an hour. The patient suffered very little, and indeed experienced little more than a feeling of inconvenience. From the time of the first application, the rush of milk supervened almost immediately after the application of the electrical currents. After the third application, the secretion was full and entire; the child had taken the breast, and the milk was abundant in the left breast, and sufficient in the right to obviate the necessity of applying the electricity on that side.—*Dublin Hospital Gazette*, July 10, from *L'Union Médicale*, Jan. 3, 1857.

SURGICAL PATHOLOGY AND THERAPEUTICS, AND OPERATIVE SURGERY.

32. *Hereditary Transmission of Tendencies to Cancerous and other Tumours.*—Dr. James Paget has made some interesting statistical investigations concerning the hereditary transmission of cancerous and other diseases.

Of 411 patients which he has tabulated, 244 had cancerous, *alias*, malignant tumours; 147 had non-cancerous, *alias* innocent tumours; and 10 had non-cancerous, but recurring tumours.

Among the 254 with cancers, 60, or 23.6 per cent. had relatives of the same or former generations with cancerous or other tumours.

Among the 147 with tumours neither cancerous nor recurring, 27, or 18.3 per cent. had such relatives with cancerous or other tumours.

Among the ten with recurring tumours, 4, or 40 per cent. had relatives with cancers.

According to these numbers, the respective hereditary tendencies to cancerous and to non-cancerous tumours would seem not very different. But an examination of the second and third tables discovers a great contrast between them.

Among the 60 cancerous patients whose relatives had tumours, not less than 57 had cancerous relatives; but among the 27 patients with tumours neither cancerous nor recurring, there were only 12 who had relatives with tumours like their own. The comparison of the respective probabilities of hereditary transmission would, therefore, be as 22.4 for the cancerous to 8.2 for the non-cancerous.

The contrast appears the stronger in sight of the fact that the greater part of the instances in which similar innocent tumours occurred in more than one member of the same family were limited to one kind of tumour. Of the 12 patients who had relatives with innocent tumours like their own, 7 had some form of cutaneous cyst of the scalp, leaving only 5, or 3.4 per cent., as marking the probability of hereditary transmission in all the other forms of innocent tumours reckoned together.

It is hence certain that cancerous disease, or a tendency to it, is prone to pass by inheritance from parent to offspring, and to occur (probably by inheritance of common properties) in many members of the same family and generation. It may seem unnecessary to bring evidence of a fact so generally believed; but there are some who doubt it, and many who are not aware of the large proportion of cases in which cancer may be referred to an hereditary origin. Moreover, a comparison shows, by the contrast of the two groups of cases, the cancerous and the non-cancerous, how many instances of apparently hereditary origin of the disease may be referred to accidental coincidence, or to the transmission, not of a diathesis, but of some peculiarity of the structure

or composition of a part. When, for example, the child of a cancerous parent has a sebaceous cyst in the scalp, we can only count it as an accidental coincidence; but the cases of this kind are not very uncommon; and it might be right to endeavour to estimate from them a deduction to be made in the reckoning of the proportion of actually inherited cancers. For if, thus, dissimilar tumours may accidentally occur in members of the same family, so, in a certain number of cases, the occurrence of similar tumours in the same family may be referred to accident. However, as the deduction to be made on this ground can scarcely be calculated, and would certainly be less than the addition that we should have to make if we could reckon the cases of inheritance from patients with unknown internal cancers, I omit it, and thus sum up the general conclusions to be drawn from the tables.

	Per cent.
Of patients with non-cancerous tumours, the proportion that has, or has had, relatives with tumours like their own, is	8.2
Do. with tumours non-cancerous, but unlike their own . . .	4.
Do. with cancerous tumours	6.8
Of patients with cancerous tumours the proportion that has, or has had, relation with cancers, is[1]	22.4
Do. with non-cancerous tumours, is	1.
Of patients with recurring non-cancerous tumours the proportion that has, or has had, relatives with cancers, is	40.

A few words may be added concerning the last-named cases. The number of instances of these recurring tumours, which occur in the members of cancerous families, justifies an opinion which I have long entertained, but which it is very difficult to establish, namely, that such tumours often represent what may be called a gradual fading of the cancerous diathesis. The cases which I have tabulated are only those which I have seen; but I have heard and read of others like them, and believe that time will prove that, among the offspring of cancerous patients, and among the members of families in which cancer has occurred, there is a peculiar liability to the production of tumours, which will recur after repeated and complete excisions, though they are neither cancerous in structure, nor attended with similar disease in the lymphatics or other organs, nor with any cachexia but such as may be ascribed to their gradual influence on the constitution.

If this can be proved, we may justly hold that this character of recurrence indicates the existence of the cancerous diathesis, either with less abundance or with less concentration of material than is required for the production of a cancerous tumour with all the typical properties.

The imperfection of the diathesis may in some cases indicate its progressive, but as yet incomplete, development; but the probability that, in other cases, the diathesis is decreasing in hereditary transmission, is supported by facts in the history of other diseases. Thus, we know many of the liabilities of the offspring of gouty, and of phthisical, and of insane persons, and that their diseases, though they may be neither gout, nor phthisis, nor insanity, are yet of the same kinds, essentially the same diseases, but less manifested; or of the same type, but less strongly marked; and we know that success in the management of these diseases depends, in great measure, on a due recognition of their parentage. Now, the recurring tumours, I believe, illustrate the same principle in the pathology of cancers; and if so, they deserve the closest study, as being palpable examples that, in the hereditary transmission of morbid conditions, there is a tendency towards their becoming less, a tendency towards

[1] This is a larger proportion than is stated in my lectures. The difference is probably due to my having here reckoned scarcely any cases besides those of patients whom I have seen, while in the Lectures I referred to cases collected from various sources. I have, probably, inquired with more than ordinary care into the family histories of patients, but I have not questioned cancerous patients more closely or more generally upon this point than I have those with other tumours. On the other hand, I have not reckoned as patients having no relatives with tumours those in whose cases I have recorded nothing concerning their families.

health.[1] This may be due either to dilution, or to changes comparable with those which restore an individual from disease to health; and very probably it is an example of that general law, according to which the deviations from the true specific form and composition, which constitute varieties in species, become in successive generations gradually less, till the perfect specific characters are regained.

In practice, the recognition of recurring tumours suggests caution in speaking of what may follow the removal of any tumours from persons of cancerous family. And this caution should be the greater, the more the removed tumours deviate from the ordinary characters of innocent growths or of the fully developed natural structures. I think that the non-cancerous tumours most likely to recur are those which, at whatever date of growth, have structures similar to those of the natural parts in their very early embryonic state. Such are recurring fibroid, composed almost wholly of elongated fibro-cells, and the recurring fibro-cellular, cartilaginous, and mammary-glandular, in all of which we find abundant soft or liquid transparent blastema, in which the proper structures, when they are to be found at all, lie loose and disorderly in their most immature forms. Indeed, whether there be any suspicion of cancerous inheritance or not, all such soft tumours with imperfect embryo structures may be regarded with fear of their recurrence after excision.—*Med. Times and Gaz.*, Aug 22, 1857.

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33. *Fracture of the Thigh for the fourth time at the same part.*—Sarah Hales, aged 60, a stout, rather pale, but not unhealthy woman, in 1847 caught her foot in the carpet and fell, breaking her left thigh-bone a little above the knee. In seven weeks she was allowed to get up, and in twelve weeks could walk again. In 1850, her foot slipped on a potato, and she again fell, breaking the bone at the same part. In six weeks it was united, and in eleven weeks she was able to get about. In 1852, when raising herself from the floor, her hand slipped, and falling upon that knee the bone was broken at the same place for the third time. She was able to walk in about the same time as before. In January, 1856, when walking along the road her foot slipped and she fell, the thigh-bone giving way for the fourth time at the same part. Whether the bone gave way before she fell, or whether it was broken by the fall she could not tell. She had not much pain, but knew the limb was broken because she had lost the use of it. She was brought to Cambridge the next day; and, when examined, the fractured portions of the bone, which were thickened a little, could be rubbed together as though the ends were rounded and smooth. This gave scarcely any pain, and there was very little swelling or bruising. Mr. Humphry was apprehensive, from this condition of the part, that union would not take place. To give it every chance, the limb was carefully splinted, and perfect rest secured by gum-chalk bandages, etc., which were kept on for eighteen weeks, when, firm union having taken place, she was allowed to get up and go on crutches. These have been some time laid aside, and she can walk without them. The bone is firmly united. There is a little overlapping, but not much thickening.—*Brit. Med. Journ.*, June 6, 1857.

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34. *Spontaneous Fracture of both Thigh-Bones.*—Sophia Low, aged 56, was admitted into Addenbrooke's Hospital, Cambridge, under the care of Mr. G. M. Humphry, April 23, 1857. The following is taken chiefly from her own account: She was a healthy-looking person. She said that her right thigh was broken May 5, 1855, under the following peculiar circumstances. For some years her leg had been subject to pain, chiefly about the middle of the thigh, but extending upwards and downwards from that point. A month before it broke, the pain became more severe, and she raised her leg from the ground with difficulty. Two days before it broke she caught her toe when going up stairs: this caused sharp pain at the middle of the thigh, and a lump formed there. She was walking out when it seemed as though the left foot caught,

[1] I think, too, that the histories of rodent ulcers, and of lupus, should be studied with a similar suspicion of their relationship to cancers.